# Sea Grant Planning and the Sustainable Coastal Development Focus Area: Implications of Climate Change

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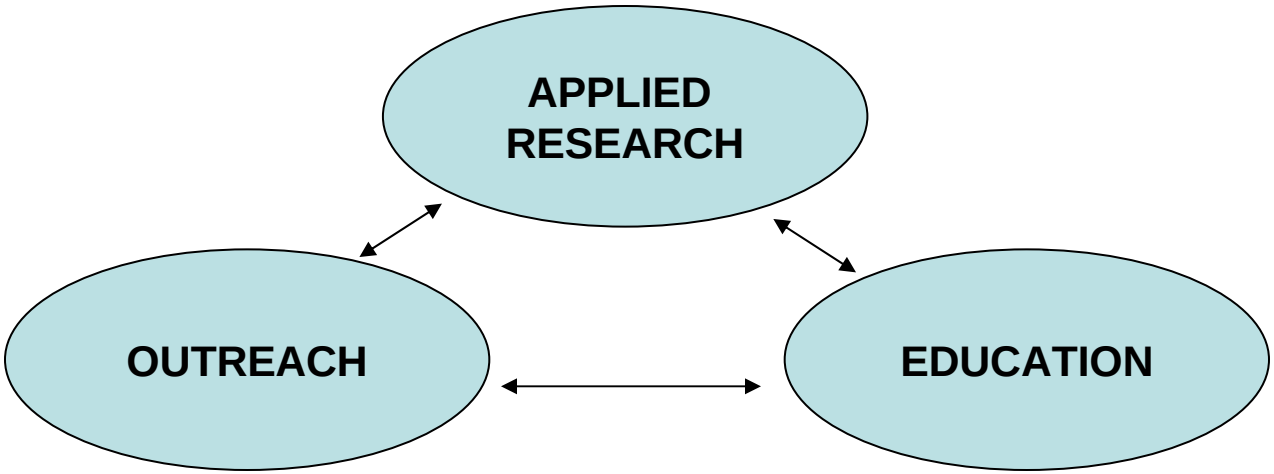
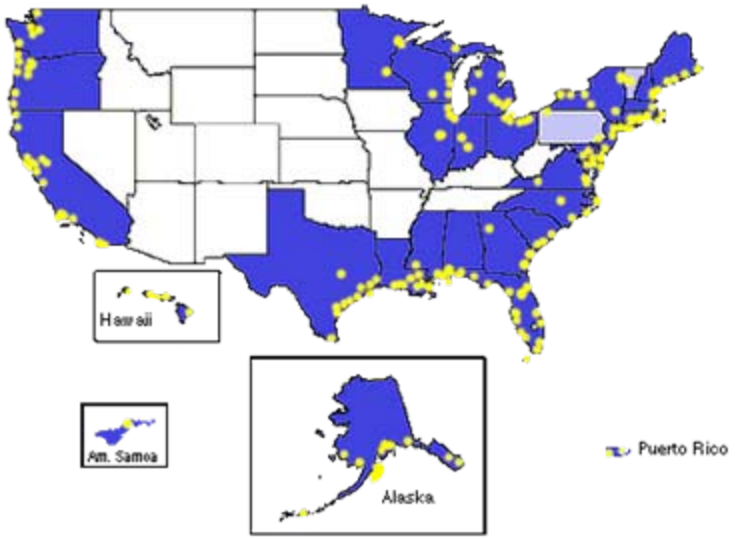
# National Sea Grant College Program

*For more than 40 years, the National Sea Grant College program has worked to create and maintain a healthy coastal environment and economy. The Sea Grant network includes more than 30 programs based at top universities in every coastal and Great Lakes state, Puerto Rico, and Guam. The programs of the Sea Grant network work together to help citizens understand, conserve and better utilize America's coastal, ocean and Great Lakes resources.*

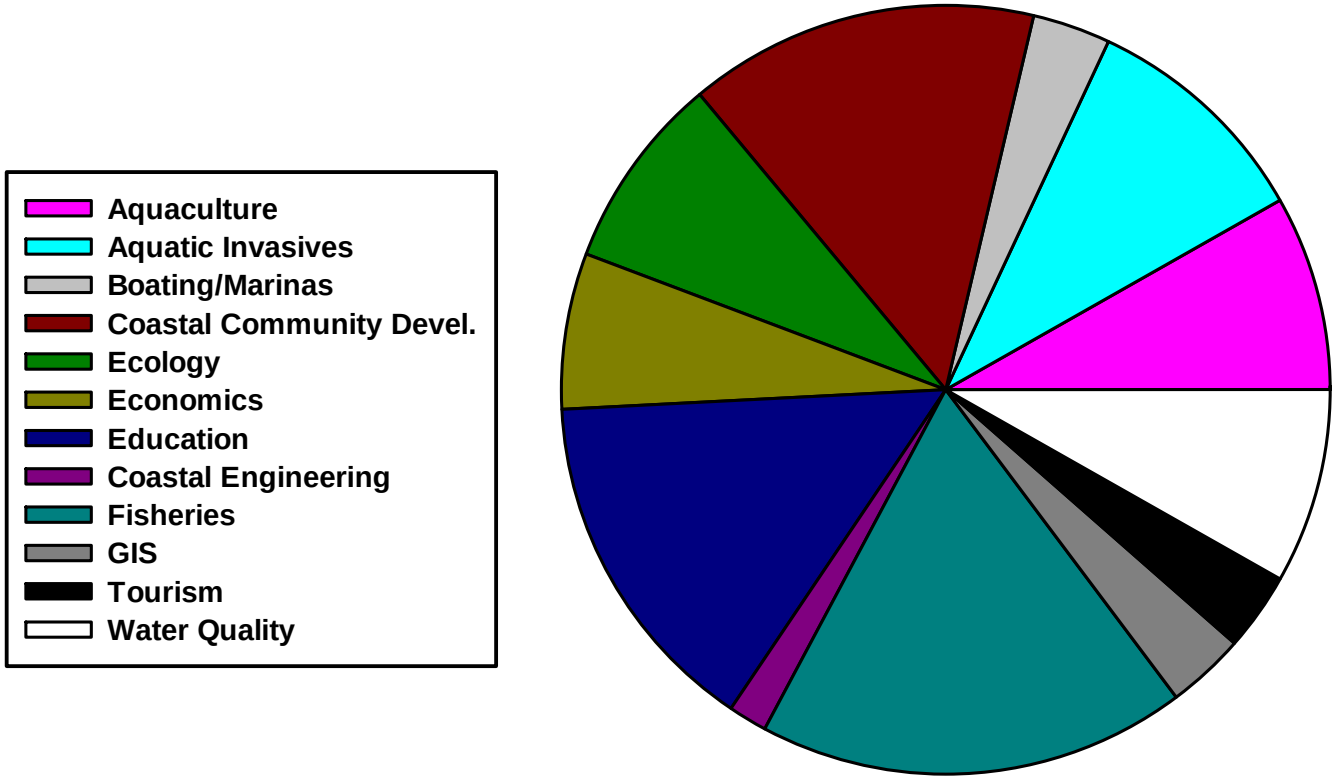


# Sea Grant Extension

**A network of more than 350 Sea Grant extension agents provide outreach and technology transfer. Working in partnership with Sea Grant communicators and educators in every coastal and Great Lakes state, plus Puerto Rico, *extension agents link university resources and expertise with local communities and user groups*. Extension agents are focused on specific topics such as improving fisheries management, developing sustainable aquaculture, decreasing water pollution, restoring habitat and identifying standards for establishing marine reserves.**

# Great Lakes Sea Grant Extension Specialties (incl. education)




In the Great Lakes, these 65 individuals play a key role as a "honest broker" links between stakeholders and science

## Question 1

### National Sea Grant College Program

As a ~~Great Lakes stakeholder~~ how much consideration have you given to the impact of climate change on:

- Overall health and integrity of the Great Lakes ecosystem
- Sustainable use, management and protection of Great Lakes resources
- Economic health and vitality
- Human health and quality of life
- Your professional activities or operations
- Policy and management issues pertaining to commerce, transportation and infrastructure

## New NOAA Sea Grant Strategic Plan

## "NOAA NATIONAL SEA GRANT COLLEGE PROGRAM STRATEGIC PLAN 2009–2013: MEETING THE CHALLENGE"

# Sea Grant Strategic Planning Process

• Review of the U.S. Commission on Ocean Policy Report and the U.S. Ocean Action Plan, the NOAA Strategic Plan, the Ocean Research Priorities Plan and Implementation Strategy, the NOAA 5-Year Research Plan, Sea Grant state strategic plans, and other recent coastal/ocean plans and reports that set national, state and regional priorities.

• National stakeholder's workshop convened in Washington, DC in July 2007, with representatives from NOAA programs, other federal agencies, and non-profit organizations that focus on coastal, ocean and Great Lakes issues

• Sea Grant network convened for Sea Grant Week in San Diego, CA in October 2007 to identify priority goals and strategies for this strategic plan.

# Sea Grant Strategic Plan Focus Areas, 2009-13

- Healthy Coastal Ecosystems
- Safe and Sustainable Seafood Supply
- Hazard Resilience in Coastal Communities
- Sustainable Coastal Development

All university-based Sea Grant programs are required to align their strategic plan to the national plan. Programs will report progress vs. performance measures in the plan. Focus Teams established to lead national efforts, monitor progress toward focus areas and advise on direction.

# History of Sea Grant
# Sustainable Coastal Development Focus Area

-NSGCP Director Ron Baird visits all Sea Grant programs in 1999-2000 and sees common community growth issues in network.

- Creates Coastal Community Development (CCD) theme and directs $50K strategic investment to each program

- Partnerships emerge including EPA Smart Growth program

- EPA hosts Smart Growth “Boot Camp” for Sea Grant extension specialists

- 60-65 Sea Grant CCD extension specialists now in network

# Sustainable Coastal Development Focus Area

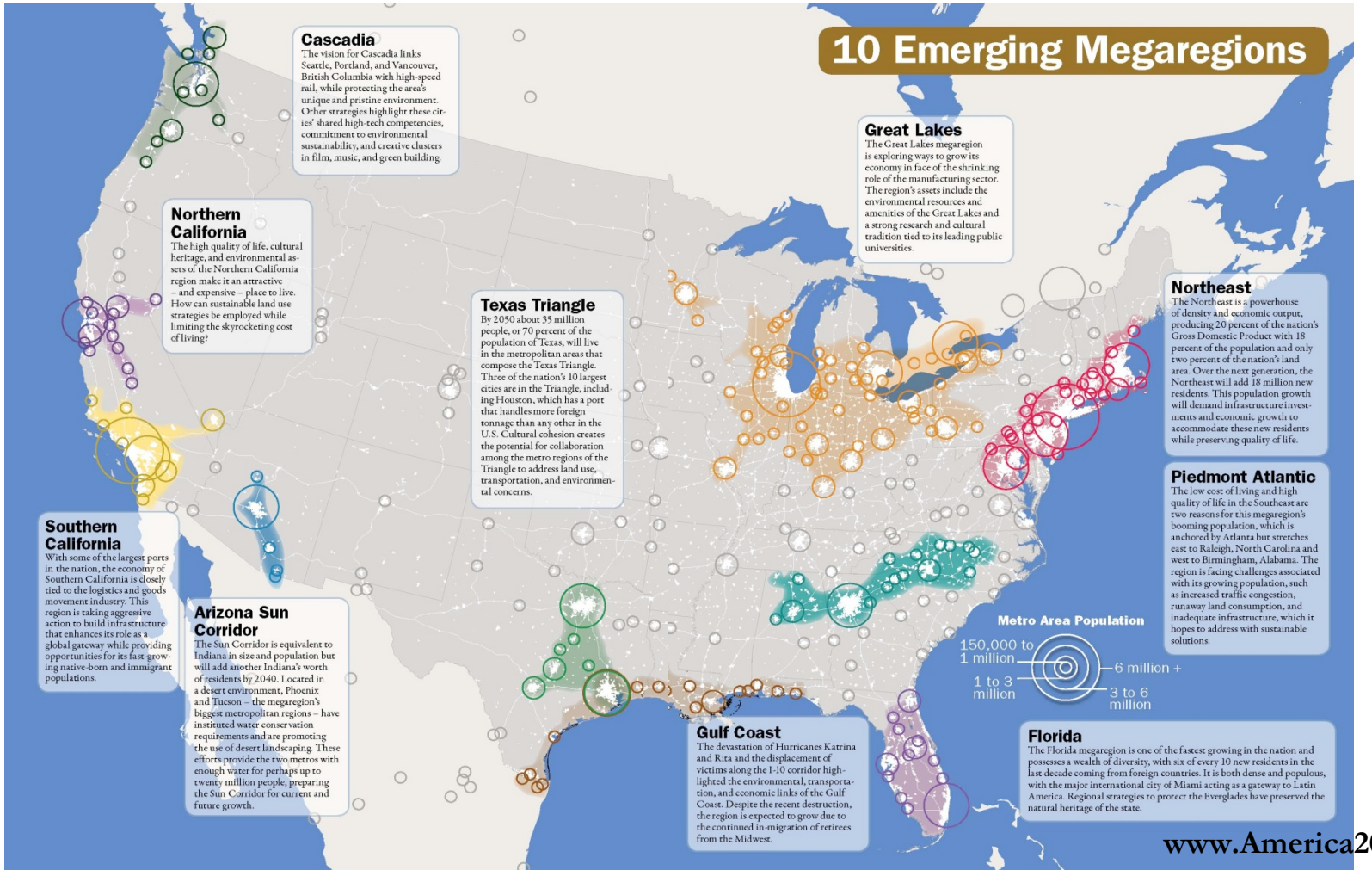
**According to America 2050, six major trends will shape America's future by midcentury:**

- **New global trading patterns**
- **Rapid population growth and demographic change**
- **Inefficient land use**
- **Uneven and inequitable growth patterns within and among regions**
- **The mounting energy crisis and global climate change**
- **Metropolitan infrastructure that is reaching the limits of its capacity**

# Sustainable Coastal Development

By 2050, more than 70 percent of the nation's population and economic growth is expected to take place in 10 megaregions linked by environmental systems, transportation networks, economies, and culture.

**(8 of these Megaregions are coastal. The Great Lakes is the largest)**




www.America2050.org

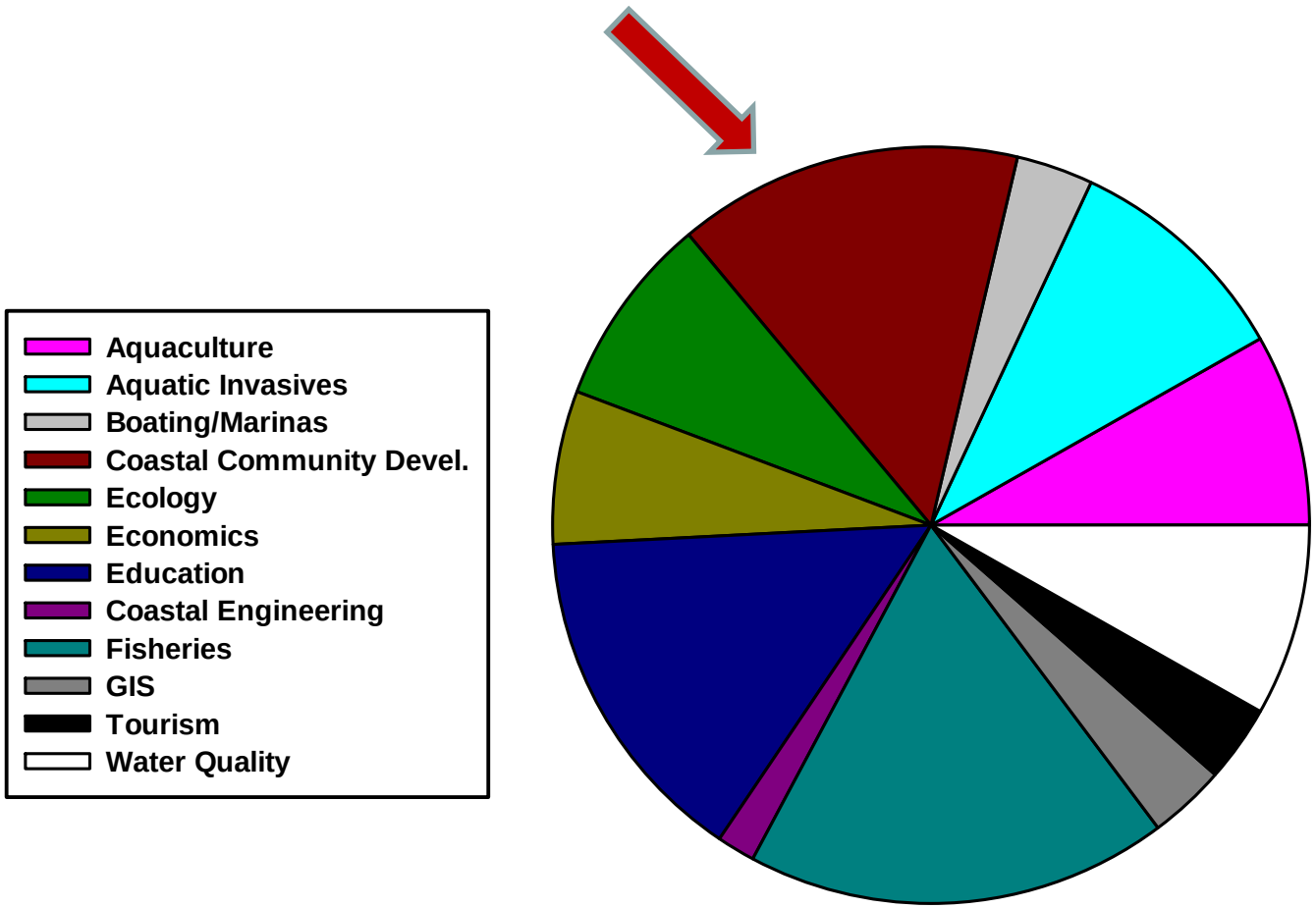
# Sustainable Coastal Communities – Strategic Goals

**Healthy coastal economies that include working waterfronts, an abundance of recreation and tourism opportunities, and coastal access for all citizens.**

**Coastal communities that make efficient use of land, energy and water resources and protect the resources needed to sustain coastal ecosystems and quality of life.**

**Coastal citizens, community leaders, and industries that recognize the complex inter-relationships between social, economic and environmental values in coastal areas and work together to balance multiple uses and optimize environmental sustainability.**

# Great Lakes Sea Grant Extension Specialties (incl. education)



# Sea Grant Sustainable Coastal Development and Climate Change

**Question 2**

**What facets of the Great Lakes - water levels, precipitation, erosion, deposition, chemistry, water temperatures, fisheries, etc - are of most concern to you? How do/will these factors influence your daily operations and long-term planning? If global climate change were to significantly impact these factors, what would you need to know in order to prepare, mitigate or adapt to those changes?**

- **All issues above are potentially important to GL coastal communities, though magnitude of importance is unknown**
- **Communities need to know what the best available science predicts. Then decide on relative risks**
- **Downscaling of current climate models for region.**
- **Development of tools (including visualization) for predicting, mitigating effects of climate change**
- **Great Lakes Issues are quite different from coastal ocean issues**

# Climate Change Visualization – for better or worse…..

From Overpeck et al.
Workshop on Climate Science and Services: Coastal Applications for Decision Making through Sea Grant Extension and Outreach, Charleston, SC. April 2007.


# Climate Change Visualization – Rhode Island Sea Grant

# Great Lakes Water Level Visualization?




# Current Sea Grant Initiatives in Climate Change

- Training – Climate extension training in Charleston (2007). Current development of climate training modules through NWS-UCAR.
- Budget Initiatives for Sea Grant Climate Extension – FY10, FY11 proposed.
- Regional climate extension specialist in the Carolinas (partnership with NOAA Climate Office RISA program
- NOAA Climate Office SARP program: Maine and Oregon Sea Grant (Climate communications); Great Lakes Sea Grant Network (Needs assessments; Links with GLERL climate researchers)
- Individual program strategic planning.
- Active partner in NOAA internal workshops on potential development of Climate Services, “Coastal Enterprise” discussions, transition issues.

# To Achieve Sustainable Coastal Development, Communities Must:

- Have **healthy coastal economies** that include working waterfronts, an abundance of recreation and tourism opportunities, and coastal access for all citizens.
- Make efficient use of land, energy, and water resources and **identify the ecological footprint** needed to sustain coastal ecosystems and quality of life.
- Have citizens, **community leaders**, and industries that recognize the complex inter-relationships between social, economic, and environmental values in coastal areas and **work together** to balance multiple uses and **protect the ecological footprint** needed for environmental sustainability.